

Research Article

**Analysis Of Different Teaching Methodologies
Applied In Undergraduate Programmes At
Various Academic Institutions In Muscat –A
Survey Based Research**

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Received on: 12-08-2014
Accepted on: 04-09-2014
Published on: 15-10-2014

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ABSTRACT

Undergraduate students have the main responsibility for planning, implementing, and evaluating their effort in self-directed learning. It is an adult learning technique that assumes that the learner knows best what their educational needs are. The facilitator's role is not only to support in self-directed learning is to support students in identifying their needs and goals for the program, but also to contribute to clarifying the students' directions and objectives and to offer timely feedback. Within the context of self-directed learning, adults can seek out and participate in a variety of teaching methods. It is important to give students opportunities to apply and reflect on lecture material during course time. Most educators agree that lectures are necessary, but that they should be limited in number and well delivered. The aim of this paper is to find out a suitable educational method to get expected educational objectives or learning outcomes from the students.

Key words: Teaching methods-Educational objectives-Comparative study of teaching strategies.

Cite this article as:

AR.Mullaicharam, Joseph Francis, Geetali Deori, Hemalatha Balasubramanian, Analysis Of Different Teaching Methodologies Applied In Undergraduate Programmes At Various Academic Institutions In Muscat –A Survey Based Research, Asian Journal of Pharmaceutical Technology & Innovation, 02 (08); 2014.

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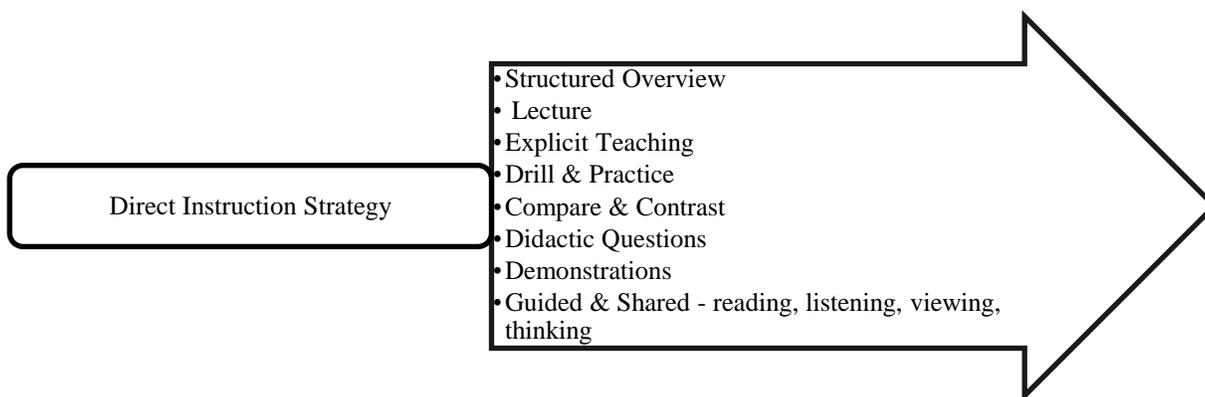
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Introduction

Instructional strategies determine the approach a teacher may take to achieve learning objectives. There are two main strategies of Direct Instruction Strategy and Indirect Instruction Strategy. The Direct Instruction Strategies are instructional strategies are used by teachers to create learning environments and to specify the nature of the activity in which the teacher and learner will be involved during the lesson. While particular methods are often associated with certain strategies, some methods may be found within a variety of strategies¹.

The Direct instruction strategy is highly teacher-directed and is among the most commonly used. This strategy is effective for providing information or developing step-by-step skills. It also works well for introducing other teaching methods, or actively involving students in knowledge construction. Under this the possible methods are

Fig:1 Direct Instruction Strategy



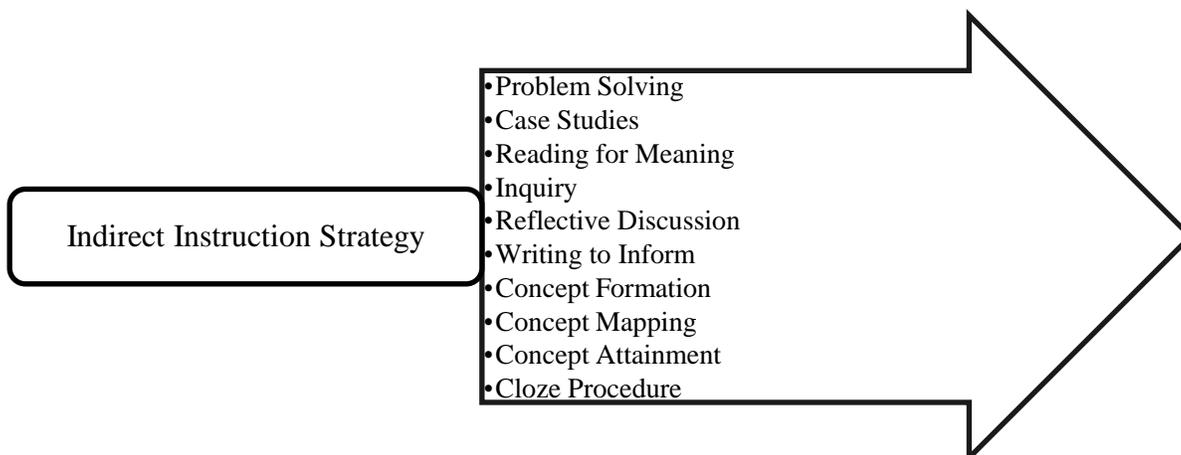
In contrast to the Direct Instruction Strategy, Indirect Instruction Strategy is mainly student-centered, although the two strategies complement each other.

Indirect instruction strategy seeks a high level of student involvement in observing, investigating, drawing inferences from data, or forming hypotheses. It takes advantage of students' interest and curiosity, often encouraging them to generate alternatives or solve problems.

In Indirect Instruction Strategy, the role of the teacher shifts from lecturer to that of a facilitator, supporter, and resource person. The teacher arranges the learning environment, provides opportunity for student involvement, and, when appropriate, provides feedback to students while they conduct the inquiry².

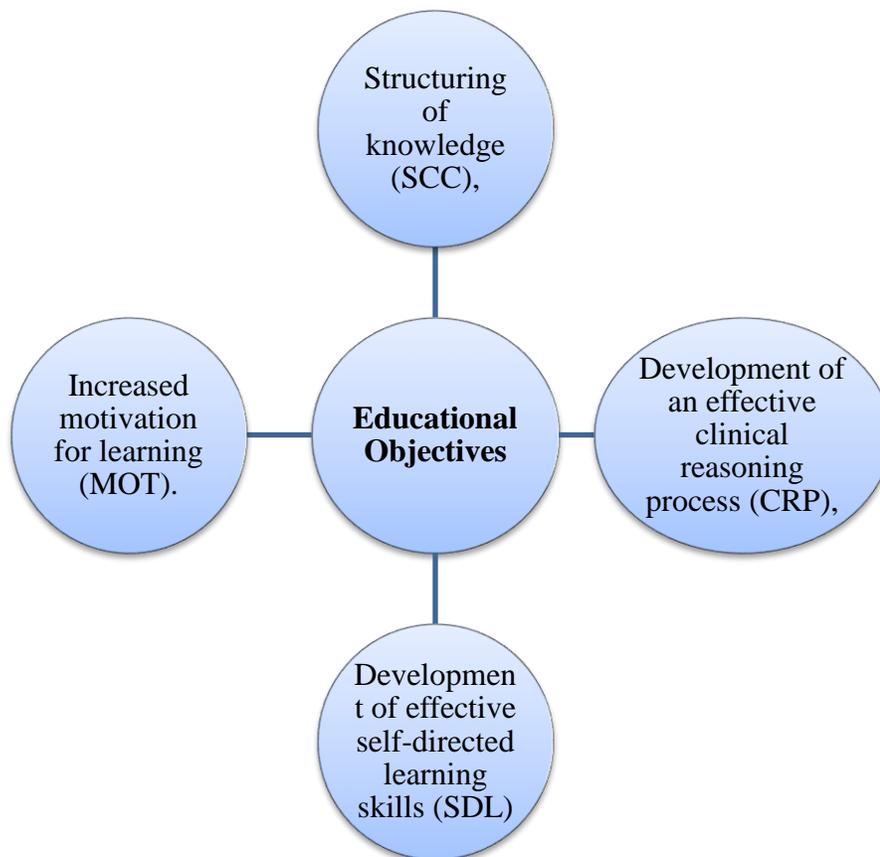
Under this the possible methods¹ are

Fig:2 Indirect Instruction Strategy.



In this study, six educational methods were listed in the order of the degree to which they accomplish the following four educational objectives which we can see in Fig 3

Fig 3: Educational Objectives



Findings reported here include some questionnaire results, but focus on comments/ ratings and derived from qualitative analysis of the interviews which supported and extended patterns evident in the quantitative analysis. The first group of themes reports effective educational methods to attain the four educational objectives perceived by teaching faculties in the undergraduate programme. The second group of themes illustrates participant descriptions of their experiences in these six educational methods at the various academic institutions in Muscat, Sultanate of Oman. The purpose of the study reported here was to develop understanding of teaching professionals' experiences and satisfaction levels with different education methods in graduate education.

Methods

Participants in the Study

A questionnaire was given to 100 teaching faculties for under graduate programmes in the various academic institutions in Muscat, (N= 100). Of these, 70 of them returned for a response rate of 70%. Respondents included both women and men, reflecting the approximate gender balance of the learning cohorts. Age range was concentrated in the 40-50 age groups (61%).

Procedure of the Study

A questionnaire was prepared keeping the discussions with different faculties. Aside from demographic information, the questions asked respondents to indicate their most significant learning related to their experiences in various teaching methods. It also asked the extent of its long-term influence on their work practice, and their personal satisfaction related to various aspects of the teaching methods present / used in the program. The questionnaire was prepared in the following manner. It was broadly divided into three sections of Educational methods, Description of methods and Teacher's comments include the ratings. These sections were further subdivided into section 1 (six name of the methods), section 2 (Description about the six methods) and section 3 about the rating and comments. The model questionnaire accomplish one of the educational objectives of the structuring of knowledge for use in clinical contexts is given below. The same format of Questionnaire was used for other three educational objectives.

Questionnaire 1. Rate the following teaching methods to accomplish one of the educational objectives of SCC. (SCC-The structuring of knowledge for use in clinical contexts) (Score 1 to 5 represents the likely hood 1=Least & 5 = Most)

S . N o	Educational Methods	Description of method	Teacher's comments (If any)	1	2	3	4	5
1	Lecture-based	Information is presented as lectures first and then cases are used to emphasize significant points.						
2	Case-based lectures	Cases are presented first for study prior to class lecture covers relevant materials.						
3	Case Method	A complete case is given to the student for study prior to class discussion, which is facilitated by a tutor. This method combines both student-directed and teacher-directed learning.						
4	Modified case based	This format features sequential management problems. Students receive some of the information and are asked to decide on the forms of action and decisions they may make. Following their conclusion, they are given more information about the case.						
5	Problem based	Students are presented with the patient problem and allowed free inquiry in tutor-led groups.						
6	Closed loop or reiterative	An extension of the problem based method above. However, after initial problem solving, the students are asked to reflect on the information and processes they used and return to the original problem for re-evaluation of their problem solving activities.						

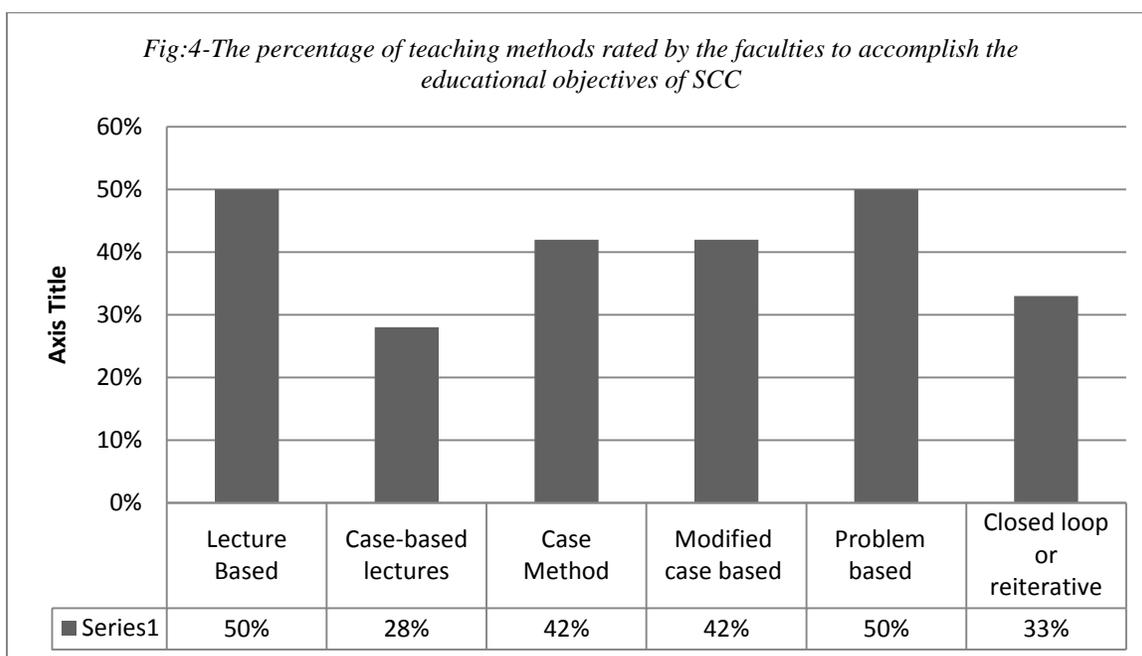
Results

The findings from the table 1 showed that the highest percentage of teaching methods rated by the faculties to accomplish the educational objectives of SCC (SCC-The structuring of knowledge for use in clinical contexts) was lecture based for large group and Problem based learning for small-group. They

gave feedback of problem-based learning experience to be “very useful” to their long-term learning as professionals. (Table -1).

Table 1: The percentage of teaching methods rated by the faculties to accomplish the educational objectives of SCC. (SCC-The structuring of knowledge for use in clinical contexts)

Lecture Based	Case-based lectures	Case Method	Modified case based	Problem based	Closed loop or reiterative
50%	28%	42%	42%	50%	33%

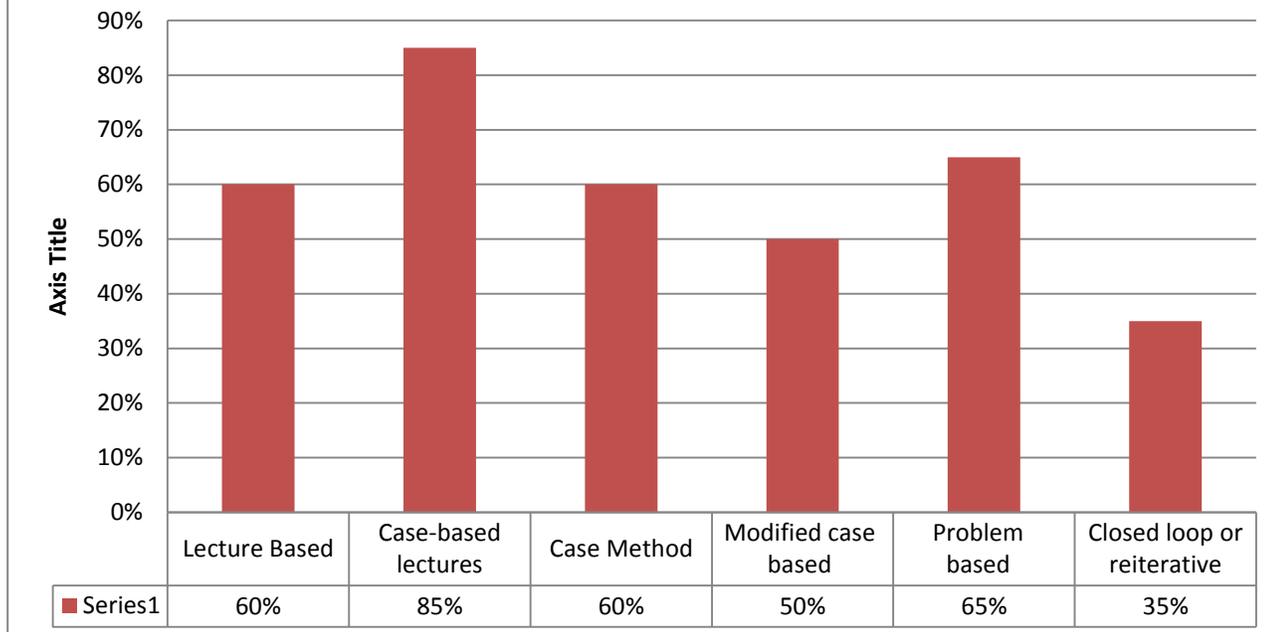


Based on the data of Table-1 and Fig 4, it is evident that Lecture based and Problem based methods are the most successful followed by case method and modified case based method. The most unpopular was closed loop or reiterative and Case-based lectures to accomplish the educational objectives of SCC. Participants’ perceptions of their most significant long-term teaching outcomes obtaining from their experiences in the PBL activities focused on two main areas: group process and self-awareness. The findings in Table 2 and Fig 5 showed that the highest percentage of teaching methods rated by the faculties to accomplish the educational objectives of the development of an effective clinical reasoning process (CRP) is Case based lectures. Next rated are Problem based method, lecture based, case method.

Table 2: The percentage of teaching methods rated by the faculties to accomplish the educational objectives of the development of an effective clinical reasoning process (CRP)

Lecture Based	Case-based lectures	Case Method	Modified case based	Problem based	Closed loop or reiterative
60%	85%	60%	50%	65%	35%

Fig: 5-The percentage of teaching methods rated by the faculties to accomplish the educational objectives of the development of an effective clinical reasoning process (CRP)



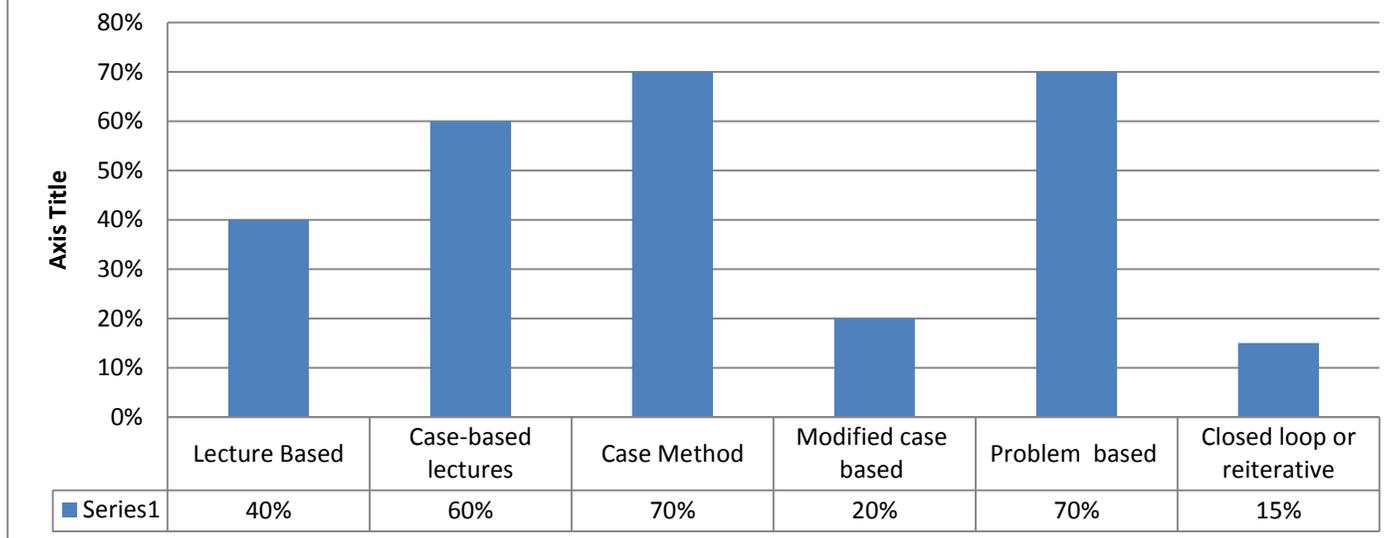
The most unpopular was closed loop or reiterative to accomplish the educational objectives of CRP. (Table -2)

From the result of Table 3 and Fig 6, it was evident that case method and problem based methods were the most successful methods to accomplish the educational objectives of the development of effective self-directed learning skills (SDL) followed by case based method and lecture based method.

Table 3: The percentage of teaching methods rated by the faculties to accomplish the educational objectives of the development of effective self-directed learning skills (SDL).

Lecture Based	Case-based lectures	Case Method	Modified case based	Problem based	Closed loop or reiterative
40%	60%	70%	20%	70%	15%

Fig:6-The percentage of teaching methods rated by the faculties to accomplish the educational objectives of the development of effective self-directed learning skills (SDL).

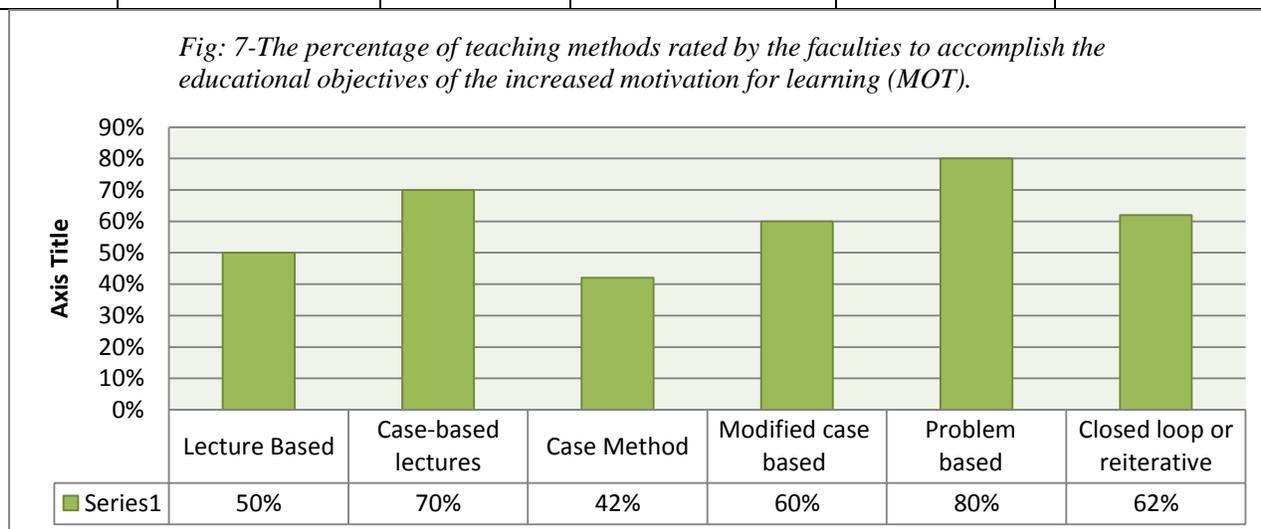


The most unpopular was closed loop or reiterative to accomplish the educational objectives of the development of effective self-directed learning skills (SDL). (Table-3).

As per the Table -4 and Fig 7, the highest percentage of teaching methods rated by the faculties to accomplish the educational objectives of the increased motivation for learning (MOT) is Problem based method. Based on the data of Table-4, it is evident that Problem based method is the most successful followed by Case based lecture, Closed loop or reiterative, Modified case based and Lecture based. The most unpopular was Case method to accomplish the educational objectives of the increased motivation for learning (MOT).

Table 4: The percentage of teaching methods rated by the faculties to accomplish the educational objectives of the increased motivation for learning (MOT).

Lecture Based	Case-based lectures	Case Method	Modified case based	Problem based	Closed loop or reiterative
50%	70%	42%	60%	80%	62%



Discussion

Lecture is one method used by teachers in general. It is the most common method of teaching. Just as with all the other tools, it should only be used when most appropriate teaching. Instruction should to help most students. As mentioned earlier, teachers should preparing their lecturers and maintain the quality of it, are very important.

They need to provide and develop the students with note taking skills¹.

Teachers commented that interactive lecturing involves an increased interchange between teachers, students and the lecture content. The use of interactive lectures can promote active learning, heighten attention and motivation, give feedback to the teacher and the student, and increase satisfaction for both.

From the study it is concluded that lecture based teaching method has significant positive impact on the structuring of knowledge for use in clinical contexts (SCC)

As reflected in this research, case based lecture CBL is an effective method in a large classroom setting than didactic lecture. To improve the outcome of didactic lecture and to promote active learning, CBL can be an effective teaching tool.

Normally it is conducted as per the following steps.

Case based lecture

- 1) Case – 5minutes
- 2) Faculty learner interaction – 10 minutes
- 3) Routine Lecture -40 minutes
- 4) Faculty learner interaction on resolution of the case – 5 minutes

All these data indicate that Case Based Lecture has significant positive impact on the development of an effective reasoning process (CRP) and is superior to traditional lecture format with regards to achieving the learning objective, understanding course content and retention of information. Also, there are several positive outcomes like improved learning skills, independent learning abilities, analytical skills etc. indicating that case based lecture is an effective method.

As the history of case study method, it reflects that it is a method used mostly in top business schools worldwide and not in general academic setting. Also it is a concept that is more popular in the Western countries. Competitions are conducted by European Case Clearing House and Globalens, to identify the best new teaching cases.

Although case method was initially introduced in business education in North America and Western Europe and it has spread to other countries also. The Middle East and North Africa region have used this method and data indicate that this method of teaching had significant positive impact on the development of an effective reasoning process (CRP).

Besides this Modified case based teaching is a format that features sequential management problems. Students receive some of the information and are asked to decide on the forms of action and decisions they may make. Following their conclusion, they are given more information about the case. According to the survey results it is proved that this method of teaching has significant impact in the development of effective self-directed learning skills. (SDL). Followed by Problem-based learning (PBL), which is both a teaching method and an approach to the curriculum. It consists of problems designed to challenge students to use problem solving techniques, self-directed learning strategies, team participation skills, and disciplinary knowledge. According to the survey results it is proved that this method of teaching has significant impact in increased motivation for learning. (MOT). Lastly is the Closed Loop or Reiterative Method. It is an extension of the problem based method above. However, after initial problem solving, the students are asked to reflect on the information and processes they used and return to the original problem for re-evaluation of their problem solving activities. The survey results showed that this method has considerable impact on the development of an effective reasoning process (CRP).

Conclusion

This study conclude that

- Lecture based method is highly accepted to accomplish the objective of SCC and CRP.
- Case based lecture is considered as a suitable tool for CRP.
- Case method is more suitable method to achieve SDL.
- Modified case base is not accepted in a significant way. But this method received moderate ratings for CRP and MOT.
- Problem based is highly accepted method to accomplish the educational objective of SCC, SDL and MOT.

In professional training, foundational or disciplinary knowledge is a basic requirement. As Hanrahan and Isaacs³ points out, changing public expectations of graduates in the workplace are demanding student outcomes. Graduates should be able to handle related skills, work in a team and develop lifelong learning skills which will help them professionally. In order to achieve this, PBL is the most suitable method. As it is reflected in the medicine⁴, education^{5,6}, pharmacy⁷, psychotherapy⁸ and other disciplines. It has proved to be more successful. Casey and Howson⁶ describe the goal of problem-centered methods as developing “creative, independent problem-solvers able to harness their

creativity through organization and planning” The widespread adoption of PBL can be argued to indicate a general pedagogical shift from what Mann and Kaufman⁹ characterize as traditional content-focused lecture-delivered instruction assessing student outcomes according to quantity of information mastered, towards activity-based, student-centered learning assessing student outcomes as ability to apply information and think critically to solve problems.

However, PBL has its disadvantages also. Issues raised include the artificiality, pre-determined, historical nature of problems that students work with, placing them in a decontextualized space which occludes important political and cultural issues of situated professional practice¹⁰. Existing literature on PBL tends to focus on student achievement¹¹ and methods of implementation¹². This achievement is measured, based on the professional perspectives shaped by framing practice as ‘problems to be solved’, and what criteria are brought to bear on questions about what counts as meaningful knowledge for professionals, are less well-explicated¹⁰. This study concludes that the teachers can use the appropriate method to reach the expected learning outcome. The education method will be chosen based on the requirement of educational objectives.

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